

**THE UNITED REPUBLIC OF TANZANIA  
NATIONAL EXAMINATIONS COUNCIL  
CERTIFICATE OF SECONDARY EDUCATION EXAMINATION**

034/1

**AGRICULTURAL SCIENCE 1**  
(For School Candidates Only)

**Time: 2:30 Hours**

**Wednesday, 18<sup>th</sup> November 2015 p.m.**

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**Instructions**

1. This paper consists of sections A, B and C.
2. Answer **all** questions in sections A and B and **one (1)** question from section C.
3. Read the instructions under each section carefully.
4. Cellular phones are **not** allowed in the examination room.
5. Write your **Examination Number** on every page of your answer booklet(s).

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## SECTION B (60 Marks)

Answer **all** questions in this section.

3. (a) What do you understand by the term ‘hypothesis’ as it is used in scientific investigation procedure? **(1 mark)**
- (b) Imagine that, for several seasons your school farm has been experiencing low maize production despite the fact that:
- Land preparation and planting are done on time using recommended certified seeds.
  - Proper spacing is used.
  - There is reliable and well distributed rainfall.
  - Weeding is done on time and
  - Pests and diseases are managed accordingly.
- Design a scientific investigation procedure that supports your hypothesis to investigate the cause of the problem. **(5 marks)**
4. (a) Explain briefly three considerations in starting fish farming **(3 marks)**
- (b) (i) What are the two advantages of fish farming? **(2 marks)**  
(ii) Account for four methods of preserving fish. **(4 marks)**
5. (a) (i) Differentiate macro from micro plant nutrients. **(2 marks)**  
(ii) A careful observation on a certain plant showed that, the young leaves of the first plant became chlorotic in areas between veins and later on the leaves turned completely white. Identify the nutrient that was deficient in the plant and state its role. **(3 marks)**
- (b) Examine four effects caused by excess supply of nitrogen to the plant. **(4 marks)**
6. (a) What is a balance sheet in farm book keeping? **(1 mark)**
- (b) When valuation was done at a school farm on 30<sup>th</sup> December 2011, the situation was as follows:
- There were several items in the store which had been bought on credit.  
These include:-  
20 bags of broilers’ mash each 20,000/= bought from Kisiju Millers.  
30 bags of fungicide worth 12,000/= obtained from TFA.  
20 bags of NPK fertilizer worth 200,000/= bought from Kilimo Traders.
- Payments for all of the above items had not yet been done. In addition there were implements worth 40,000/= and maize bags worth 150,000/=. The farm had 200,000/= at CRDB bank and 100,000/= on hand.
- Prepare a balance sheet of the school farm as at 30<sup>th</sup> December 2011. **(6 marks)**

7. (a) (i) Explain briefly why it is likely for the extension work to be more effective when it is conducted by a female extension workers than men. **(2 marks)**
- (ii) Why is it important for the extension worker to win the support of the local leaders in the community? **(1 mark)**
- (b) During farm visits in the village, an extension worker discovered that one farmer had not used correct spacing in planting the maize seeds. The extension worker started blaming the farmer and ordered for the maize seeds to be replanted while simply mentioning the correct spacing to be used. When the farmer wanted to explain something, the extension worker interrupted, and because it was 3:30 pm by that time, the extension worker postponed the visit to other farms promising to continue in the following day. Comment on the behavior shown by the extension worker as far as the desirable qualities of the extension agent are concerned. **(5 marks)**
8. Cassava is one of the root crops that farmers in Tanzania are encouraged to grow.
- (a) (i) Write down the scientific name for cassava. **(1 mark)**
- (ii) State four advantages of growing cassava. **(2 marks)**
- (b) (i) Why nitrogenous fertilizers are not recommended when growing cassava? **(1 mark)**
- (ii) Briefly describe the procedure for propagating cassava. **(3 marks)**
9. (a) What do you understand by the following terms as they are used in livestock production?
- (i) Hay
- (ii) Silage **(2 marks)**
- (b) (i) Assess the importance of hay and silage in livestock production. **(2 marks)**
- (ii) Briefly describe the process of making hay. **(3 marks)**
10. (a) What is meant by draught animals? **(1 mark)**
- (b) Briefly explain four advantages and two limitations of using draught animals in agriculture. **(6 marks)**

### SECTION C (20 Marks)

Answer **one (1)** question from this section.

11. Soil pollution causes environmental degradation. Explain four causes of soil pollution and suggest six suitable measures to manage the environment from soil pollution.
12. Besides having many advantages, goat farming is rarely practiced in some parts of Tanzania. Account for twelve advantages of goats and explain any four problems of keeping goats.
13. Explain seven problems associated with marketing of agricultural produce and propose possible solution for each problem.